

REMARKS/ARGUMENTS

Support for the amendment to Claim 1 is found at specification page 5, lines 1-4. No new matter has been entered.

The combination of Hata with Sugao fails to present a *prima facie* case.

As now claimed, the invention relates to a semiconductor structure comprising a monocrystalline substrate comprising a (001) semiconductor material having an orientation from about 2 degrees to about 6 degrees offset toward the (110) direction, an amorphous intermediate layer in contact with the monocrystalline substrate, a binary metal oxide material layer formed of BaO, SrO, or an oxide blend of Ba and Sr in contact with said amorphous intermediate layer; and a monocrystalline material layer formed overlying the binary metal oxide, where the amorphous intermediate layer is formed by oxidation of the substrate during formation of said binary metal oxide material layer. This unique combination of substrate orientation, amorphous intermediate layer growth, and particular binary oxide (BaO, SrO, or an oxide blend of Ba and Sr) gives rise to structures providing heretofore unknown device possibilities, and avoids step height mismatch problems provided by other materials. See, e.g., specification page 5.

Neither Hara nor Sugao suggest this particular structure, either alone or taken in combination, as neither reference provides enough guidance to direct one of ordinary skill in the art to the particular combination of substrate, binary oxide of BaO, SrO, or an oxide blend of Ba and Sr, and amorphous intermediate layer growth conditions specified in the claim, or suggests or enables the final product structure now claimed or the benefits it provides. In particular, Hata is limited to YSZ, CeO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, MgO and ZrO<sub>2</sub>:

More specifically, the silicon substrate and the target are disposed facing each other within a reactive sputtering apparatus, the reactive gas is supplied into the apparatus in such a manner that there is a larger amount of the reactive gas around the substrate than around the target, and inert gas which is supplied into the apparatus is discharged and the crystal layer

of the crystalline insulation substance is grown, whereby the substrate for a semiconductor device is obtained. Even more specifically, the target may be a composite target or an alloy target of zirconium (Zr) and yttrium (Y), the reactive gas may be oxygen, the crystalline insulation layer may be YSZ, and the insulation silicon compound may be silicon oxide.

When Ce, Al, Mg or Zr is used as the target, it is possible to grow  $\text{CeO}_2$ ,  $\text{Al}_2\text{O}_3$ , MgO or  $\text{ZrO}_2$ , respectively, as the crystalline insulation layer.

See the paragraph bridging columns 2 and 3 of Hata.

With regard to the double patenting rejection, the Office is kindly holding these rejections in abeyance until the indication of allowable subject matter. In this regard, Applicant is now preparing their response to the double patenting rejections in this series of cases, which is expected to address all such rejections.

Respectfully submitted,

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